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United States General Accounting Office
Washington, DC 20548

Resources, Community, and
Economic Development Division

B-283568

September 14, 1999

The Honorable John R. Kasich
Chairman, Committee on the Budget
House of Representatives

Subject: Department of Energy: Fiscal Year 1998 Obligations for Fossil Energy Programs

Dear Mr. Chairman:

The Department of Energy's (DOE) fiscal year 1998 appropriations provided about \$362 million for the Fossil Energy Research and Development (R&D) Program and rescinded about \$101 million of the related Clean Coal Technology Demonstration Program.¹ Last year, as we reported, DOE estimated that its obligations for the two programs during fiscal year 1998 would be \$581.3 million.² As agreed with your office, this report compares the actual fiscal year 1998 obligations for the Fossil Energy R&D Program and the Clean Coal Technology Demonstration Program with the estimated obligations that we previously reported.³

During fiscal year 1998, DOE's Fossil Energy R&D Program obligated about 1 percent less money than had been estimated. The Clean Coal Technology Demonstration Program obligated the same amount of money that DOE had estimated would be obligated. Within the Fossil Energy R&D Program, the increase or decrease in obligations varied by program as well as by phase of R&D. Enclosure I provides a program-by-program comparison of DOE's actual fiscal year 1998 obligations with the Department's earlier estimates.

We obtained the data on the actual fiscal year 1998 obligations from the Department's Office of Fossil Energy. We conducted our work in August and September 1999 in accordance with generally accepted government auditing standards.

As agreed, unless you announce the contents of this letter earlier, we plan no further distribution until 30 days from the date of the letter. At that time, we will send copies to

¹From 1985 through 1992, the Congress appropriated \$2.7 billion for the Clean Coal Technology Demonstration Program. These funds have been reduced through rescissions and sequestrations, including the fiscal year 1998 rescission, to about \$2.3 billion.

²Department of Energy: Fossil Energy Programs (GAO/RCED-98-63, Jan. 30, 1998). This report provided actual obligations for fiscal years 1996 and 1997 and estimated obligations, as of December 1997, for fiscal year 1998. The estimated obligations were funds that DOE had committed or had planned to commit to spend during the fiscal year. DOE generally commits to spend funds by awarding contracts and cooperative agreements or agreeing to fund specific activities that are included under such agreements.

³The actual fiscal year 1998 obligations are those reported by DOE as of the end of fiscal year 1998.

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Bill Richardson, Secretary of Energy, and make copies available to others on request. Key contributors to this review were Robin Nazzaro and Sandy Joseph. If you or your staff have any questions about this report, please call me at (202) 512-3481.

Sincerely yours,



Jim Wells

Director, Energy, Resources,
and Science Issues

Enclosure

**Comparison of DOE's Estimated and Actual Fiscal Year 1998
Obligations in Fossil Energy Programs**

Table 1.1: Comparison of DOE's Estimated and Actual Fiscal Year 1998 Obligations for R&D and Non-R&D Programs Within Two of DOE's Fossil Energy Programs

Dollars in millions

Activity and program area	Estimated fiscal year 1998	Actual fiscal year 1998	Difference
R&D			
Fossil Energy R&D	\$273.7	\$270.2	-\$3.5
Clean Coal Technology Demonstration	204.1	204.1	0
Subtotal	477.8	474.3	-3.5
Non-R&D			
Fossil Energy R&D	87.6	86.9	-.7
Clean Coal Technology Demonstration	15.9	15.9	0
Subtotal	103.5	102.8	-.7
Total	\$581.3	\$577.1	-\$4.2

Source: Developed by GAO using DOE's data.

Table 1.2: Comparison of DOE's Estimated and Actual Fiscal Year 1998 Obligations for Non-R&D Programs Within Two Energy Programs

Dollars in millions

Program	Estimated fiscal year 1998	Actual fiscal year 1998	Difference
Fossil Energy R&D			
Program direction and management support	\$66.1	\$66.5	\$.4
Environmental restoration	13.3	13.1	-.2
Coal*	3.3	2.8	-.5
Fuels Program	2.2	2.5	.3
Plant and capital equipment	2.7	2.0	-.7
Total	\$87.6	\$86.9	-.7
Clean Coal Technology Demonstration			
Program direction and management support	\$15.9	\$15.9	0

*These funds are used for coal technology export, support of international activities, and grants to colleges and universities.

Source: Developed by GAO using DOE's data.

Table 1. 3: Comparison of DOE's Estimated and Actual Fiscal Year 1998 Obligations for Fossil Energy R&D by Phases of R&D

Dollars in thousands

Program/subprogram/ budget category	Basic research		Applied research		Development	
	Actual fiscal year 1998	Change from estimate fiscal year 1998	Actual fiscal year 1998	Change from estimate fiscal year 1998	Actual fiscal year 1998	Change from estimate fiscal year 1998
Coal Program						
Advanced Clean Fuels Research						
Coal preparation	\$417	\$0	\$3,362	\$50	\$1,251	\$0
Direct liquefaction	584	5	3,967	40	1,092	0
Indirect liquefaction	481	0	1,688	-599	1,762	0
Advanced research and environmental technologies	45	0	1,038	10	418	0
Subtotal	\$1,527	\$5	\$10,055	-\$499	\$4,523	\$0
Advanced Clean/Efficient Power Systems						
Advanced pulverized coal-fired power plant	\$328	\$0	\$10,676	\$0	\$4,747	\$2,069
Indirect fired cycle	568	-88	1,134	-1,363	3,011	-1,187
High-efficiency integrated gasification combined cycle	2,458	0	11,322	-825	7,617	0
High-efficiency pressurized fluidized bed	1,072	0	10,334	-820	5,791	-96
Advanced research and environmental technologies	556	-28	9,127	561	3,720	534
Kalina cycle	0	0	0	-391	0	0
Subtotal	\$4,982	-\$116	\$42,593	-\$2,838	\$24,886	\$1,320
Advanced Research and Technology Development						
Coal utilization science	\$2,988	-\$85	\$0	\$0	\$0	\$0
Technology crosscut	2,216	-96	245	-715	0	0
University coal research	2,648	-484	0	0	0	0
Materials and components	3,170	-357	1,918	-61	0	0
Subtotal	\$11,022	-\$1,022	\$2,163	-\$776	\$0	\$0
Total, Coal Program	\$17,531	-\$1,133	\$54,811	-\$4,113	\$29,409	\$1,320

Enclosure I

Program/subprogram/ budget category	Basic research		Applied research		Development	
	Actual fiscal year 1998	Change from estimate fiscal year 1998	Actual fiscal year 1998	Change from estimate fiscal year 1998	Actual fiscal year 1998	Change from estimate fiscal year 1998
Gas Program						
Natural Gas Research						
Exploration and production	\$1,395	-\$94	\$6,492	\$0	\$5,984	\$0
Delivery and storage	160	61	217	-302	372	-16
Turbines	3,390	238	23,476	3	16,892	3
Utilization	477	-4	2,741	-698	2,875	0
Environmental and regulatory	418	-44	593	-18	2,001	0
Subtotal	\$5,840	\$157	\$33,519	-\$1,015	\$28,124	-\$13
Fuel Cells						
Advanced research	\$149	\$16	\$450	-\$167	\$560	\$0
Molten carbonate systems	0	0	0	0	0	0
Advanced concepts	0	0	0	0	0	0
Fuel cell systems	1,426	-41	7,722	-357	29,950	1,387
Subtotal	\$1,575	-\$25	\$8,172	-\$524	\$30,510	\$1,387
Total, Gas Program	\$7,415	\$132	\$41,691	-\$1,539	\$58,634	\$1,374
Petroleum Program						
Oil Technology						
Exploration and Production supporting research	\$740	-\$206	\$9,940	-\$870	\$21,955	\$2,800
Recovery field demonstrations	0	-484	0	-3,115	1,073	-2,247
Exploration and production environmental research	507	-6	2,126	-358	3,102	114
Processing research and downstream operations	497	23	1,891	-191	2,945	1
Total, Petroleum Program	\$1,744	-673	\$13,957	-\$4,534	\$29,075	\$668
Other Fossil R&D						
Cooperative R&D	\$1,422	-\$37	\$1,431	-\$32	\$2,873	-\$45
Mining R&D	10,216	5,251	0	0	0	0
Total, Other Fossil R&D	\$11,638	\$5,214	\$1,431	-\$32	\$2,873	-\$45
Total Fossil Energy R&D	\$38,328	\$3,540	\$111,890	-\$10,218	\$119,991	\$3,317

Note: Table does not include the demonstration phase of R&D because no funds were spent on that phase.

Source: Developed by GAO using DOE's data.

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